Piezoelectric Velocity Sensor with top connector

PVS-111

FEATURES

- Annular shear mode is less susceptible to base strain
- Dual case isolation with Faraday shield
- Ultra low noise electronic
- Miswiring and surge protections
- Low cost IP67 overmolded M12 cable assembly
- M12 offers compatibility with sensors used in automation
- Stainless steel body protected against water, and shock

Monitoring solution

Shaft & bearing vibration - absolute

Typical applications

Hydrogenerators

Pumps, fan, cooling towers...

Gas & steam turbines

DESCRIPTION

The hermetic sealed industrial piezovelocity transducer PVS-111 is designed to monitor the vibration in harsh industrial environment. It uses the industry standard ©ICP 2-wire voltage transmission technic with a 4 mA standard constant current supply. Signal ground is isolated from the mounting surface and outer case to prevent ground loops. Faraday shielding limits sensitivity to EMC to a minimum.
Annular shear mode prevents from thermal transient and base strain. Low noise electronic and a temperature compensated design will ensure accurate results over the complete temperature range.
Piezovelocity sensors use an internal integration circuit which inherently decrease high frequency signals allowing better measurement of low frequency signal. Paper machine dryers (when steam leaks), pumps (cavitation high frequency noise) are prone to such phenomenon.
The sensor provides a voltage output proportional to the vibration velocity across the two transmission wires. The DC standing voltage is used for OK detection and the dynamic voltage for vibration monitoring.

GLOBAL SPECIFICATIONS

OPERATION	
Measuring principle	Piezoelectric annular shear mode with built-in electronic
Measuring parameter	Vibration velocity
Electrical grounding	Isolated from machine ground
Shielding	Internal Faraday shielding
Isolation case to shield	100MΩ
Capacitance to ground	70pF nominal
Sensitivity	100mV/ips / 4mV/mm/s ±10%
Output impedance	200Ω nominal
Output bias voltage	$+10V_{DC}$
Residual noise (24°C)	
2Hz to 25kHz	25µin/s
10Hz	10µin/s
1'000Hz	0.1µin/s
Frequency response	
±10%	2.5 to 3'500Hz
±3dB	1.9 to 7'000Hz
Mounted resonant frequency	16kHz nominal
Dynamic range	50in/s pk / 1250mm/s
Transverse sensitivity	< 5% max of nominal sensitivity at 20Hz, 5g
Linearity	±1% max
Warm up time	< 5s
Power supply	
Constant current source	$+2$ to $+10mA_{DC}$
Voltage	$+22$ to $+28V_{DC}$
Protection	Built-in overvoltage and reverse polarity protection
ENVIRONMENTAL	
Temperature range (continuous operation)	-55°C to +120°C
Humidity / Enclosure	Hermetically sealed
Acceleration limit	
Shock	2'500g pk
Continuous vibration	250g pk
Base strain sensitivity	0.004g in/s/µstrain
ESD protection	> 40V
EMC emission	EN50081-1, EN50081-2
EMC immunity	EN50082-1, EN50082-2
PHYSICAL	
Body material	Stainless steel DIN 1.4401
Weight (sensor only)	95g
Connector	M12 glass seal, IEC 60947-5-2
Mounting screw	M6
Mounting torque	2.4Nm

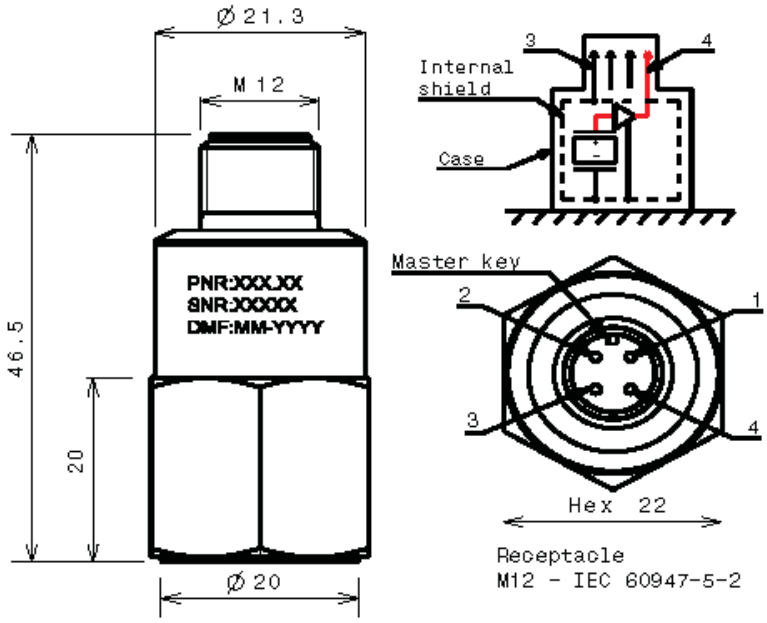
ORDERING INFORMATION

Part type	Piezoelectric velocity sensor with M12 connector top exit
Ordering code	01.111.000
Description	PVS-111 Sensitivity = 100mV/ips / 4mV/mm/s ±10%

AVAILABLE ACCESSORIES

Part type	Extension cable
Ordering code	01.100.010
Cable length	10m (other length upon request)

MECHANICAL DRAWING



PINOUT	Ext. cable M12
-	Blue
+	Black
Shield	Clear
n/c	Brown & White

Due to the continual development of our products we reserve the right to modify the specifications without notification

MC-monitoring Quality certifications

LOCAL REPRESENTATIVE

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